

News Release



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December 4, 2008

About 65 million years ago, according to many scientists, a massive rock – about 10 km in diameter, or the size of a small town – explosively crashed into planet Earth, kicked billions of tons of dust and debris into the air, which blocked out the Sun for perhaps months and made life on Earth nearly impossible. The event is most famously known as the likely cause of the demise of the dinosaurs.

It was not the first time this happened. And it will probably not be the last.

Asteroids, comets and the risks from possible impacts are frequent subjects of both popular culture and scientific research, including NASA missions to explore these small bodies and ground-based observations from both professional and amateur astronomers. They provide clues to the rich history of our universe, our planet and maybe even life itself.

A new \$3 million project, funded by the National Science Foundation, is underway to help tell the story of these messengers from space. The project will develop innovative ways to broaden the public's understanding of them and the risks that they pose. *Asteroids!* is a comprehensive informal education project that integrates astronomy, mathematics and biology topics into an exciting and memorable experience for children and adults.

“This national traveling exhibition will reach every region of the country and includes a large exhibit, several smaller exhibits, and a comprehensive education and outreach program,” said Paul Dusenbery, the project's lead investigator with the Space Science Institute.

Asteroids! is headed by the Space Science Institute of Boulder, Colo. in partnership with the Astronomical Society of the Pacific, the Association of Science-Technology Centers and two science centers in different regions of the country, each reaching out to underprivileged audiences: the Catawba Science Center in Hickory, North Carolina and the New Mexico Museum of Natural History and Science in Albuquerque. Jeff Kennedy Associates (Somerville, Massachusetts) will design the exhibits.

“Not only should the public understand what these objects are and how they behave, but also how they’ve played a role in our history,” Dusenbery said. “We can even help them understand what risks they actually pose to life on Earth.”

The project will target young people with a wide array of interactive experiences, such as a “crater-maker.” This exhibit will allow visitors to load and fire a projectile into a powder-filled basin, generating a classic crater. A high-speed digital video camera will record the collision, so the visitor can play back the impact in slow motion and witness the key components of crater formation – such as the motion of ejected particles and the creation of a central peak.

Other innovative exhibits within *Asteroids!* will simulate the effects of very large impacts on our planet – such as the one that struck 65 million years ago and wiped out the dinosaurs. Fossil record evidence will also be available to visitors so that they might gain an appreciation for the possible role of asteroids in past mass extinctions, as well as their often-theorized role in the origins of life itself.

“Over the 3-year development of this project, a group of seventh and eighth-graders will help determine its direction,” Dusenbery said. “In the end they’ll learn lots about asteroids and comets as well as how to design education and outreach programs.” “Understanding asteroids cannot only help us learn about the history of our planet but we can also use what we know about asteroids very close to Earth to draw conclusions about what planetary systems revolving around other stars might be like,” said Brian Warner, amateur astronomer and one of the project’s science coordinators with the Space Science Institute (Colorado Springs office).

“The general idea is to understand how asteroids and comets have evolved over time,” he said. “You can extrapolate this and look at how solar systems outside ours have evolved.”

Warner’s co-science coordinator, Alan Harris of the Space Science Institute (Pasadena, CA office), will also help to determine the scientific content of the exhibition. Harris’ research involves studying asteroids that come very close to our planet (so called Near Earth Objects) and assessing the possible likelihood of future impacts.

As astronomers continue to search the skies to identify the asteroids that come in close proximity to our planet, the actual likelihood of a major impact happening within the next hundred years becomes better known, Harris said. Since none of the large asteroids that have been found by astronomers are about to strike Earth, the risk of dying from a collision with these celestial bodies has decreased the more we have learned. Surprisingly, the risk of being killed during a round-trip flight from L.A. to Denver is actually larger than this, Harris said.

“We want to change people’s perception of the risk that asteroids pose,” Dusenbery said. “This is a time when people are concerned about many forms of risk. The exhibits will tell the fascinating story of these messengers from space and at the same time put the odds of an asteroid impact with Earth in perspective.”

The Space Science Institute is a nonprofit organization that carries out world-class research in space and Earth science, together with innovative science education programs that inspire and deepen the public's understanding of planet Earth and its place in the grander Universe. The institute's integrated research and education programs span planetary science, space physics, astrophysics, astrobiology, and Earth science.

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